



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,832	06/05/2006	Matthieu Richard	3741	7186

7590  
Striker Striker & Stenby  
103 East Neck Road  
Huntington, NY 11743

06/23/2010

EXAMINER
----------

LEGASSE JR, FRANCIS M

ART UNIT	PAPER NUMBER
----------	--------------

2878

MAIL DATE	DELIVERY MODE
-----------	---------------

06/23/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,832	<b>Applicant(s)</b> RICHARD, MATTHIEU	
	<b>Examiner</b> FRANCIS M. LEGASSE JR	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 June 2010 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 4, 6, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Altfather et al. (US Patent No. 5,997,121, "Altfather", hereinafter).**

**Regarding claim 1**, Altfather (*figures 2, 5A and 5B*) discloses an intrusion detector including a sensor arrangement for detecting a liquid applied on a surface to render the intrusion detector inoperable, the sensor arrangement comprising:

- at least one transparent elevation (21) formed on the surface (17A), wherein the transparent elevation (21) is made of a first transparent material, and at

Art Unit: 2878

- least one first facet (21A) of the transparent elevation (21) is defining a first angle with the surface (17A);
- wherein the first angle is larger than an angle at which a total reflection occurs at an interface of the first transparent material and air and smaller than an angle at which a total reflection occurs at an interface of the first transparent material and the liquid (Ink) (see figure 5A and 5B);
  - at least one second elevation (22) having a second facet (22A) formed adjacent to a first facet (21B) of a first elevation (21) wherein the second facet (22B) defines a second angle with the surface (17A), wherein the second angle is larger than  $75^\circ$ , such that capillary effects are enhanced;
  - a light source (34) arranged for emitting an incident ray into a first direction such that the incident ray (A) passes through the surface (17A) into one of the transparent elevation (21) and the second elevation (22), such that in presence of a liquid (Ink) at one of the first facet and the second facet an incident ray will be transmitted through the first facet (21A) or the second facet (22A), wherein in absence of a liquid (Ink) the incident ray will be reflected due to a total reflection at the first facets (21A and 21B) or the second facet (22A);
  - a light detector (38) for detecting the reflected incident ray at one of the first facet and the second facet.

**Note:** Applicant is reminded that the approximate critical angle for air/surface interface is  $42^\circ$ . The approximate critical angle for liquid/surface interface is equal to or

greater than 60°. Further, if these conditions are not met the above reference would not function properly. As measured with a protractor, the first angle is 45°, thus fulfilling the requirements of the claim language.

**Regarding claim 4**, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that the elevation (21) is formed with a trapezoid cross-section.

**Regarding claim 6**, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, characterized in that the second transparent material (polypropylene) has a refractive index of more than about 1.5 and the first angle is in the range of 42° to 60°.

**Regarding claim 9**, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that first direction (dotted traveling from the light source (36)) is substantially perpendicular to the surface (17A).

**Regarding claim 10**, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, characterized in that the second elevations (22) are provided with a top facet being substantially parallel to the surface (17A).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2878

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Altfather.**

**Regarding claim 3,** Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that the elevation (21) is formed with a triangular cross-section but fails to teach an elevation that has a tetrahedron shape and three first facets.

It is common knowledge in the art to use any particular shape that will be able to provide a total internal reflection when air is present.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tetrahedron shape for the elevation because it will provide alternative shapes and arrangements to ensure that the liquid will be properly sensed.

**Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Altfather in view of Maeda (US Patent No. 6,626,510 B2).**

**Regarding claim 8,** Altfather (*figures 2, 5A and 5B*) discloses an intrusion detector including a sensor arrangement for detecting a liquid applied on a surface to render the intrusion detector inoperable, the sensor arrangement comprising at least one transparent elevation (21) formed on the surface (17A) but fails to explicitly teach the angle defined by two adjacent first facets of at least one elevation is different to 90 degrees.

Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that an angle defined by two adjacent first facets (peak of triangle) of at least one elevation is different to 90°.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the shape arrangement of Maeda in combination with the device of Altfather because it merely provides a different geometric arrangement of the transparent elevations.

**Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Wieser et al. (US Patent No. 5,942,976, “Wieser”, hereinafter) in view of Altfather.**

**Regarding claim 1**, Wieser (*figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising:

- at least one transparent elevation (4) formed on the surface (3), wherein the transparent elevation (4) is made of a first transparent material, and at least one first facet of the transparent elevation (4) is defining a first angle with the surface (3);
- a light source (8) arranged for emitting an incident ray into a first direction such that the incident ray passes through the surface (3) into the transparent elevation (4), such that in presence of a liquid (spray adhesive) at the first facet an incident ray will be transmitted through the first facet, wherein in absence of a liquid (spray adhesive) the incident ray will be reflected due to a total reflection at the first facets (col. 4, lines 49-59);
- a light detector (9) for detecting the reflected incident ray.

Wieser fails to teach that the first angle is larger than an angle at which a total reflection occurs at an interface of the first transparent material and air and smaller than an angle at which a total reflection occurs at an interface of the first transparent material and the liquid, at least one second elevation (22) having a second facet (22A) formed adjacent to a first facet (21B) of a first elevation (21) wherein the second facet (22B) defines a second angle with the surface (17A), wherein the second angle is larger than  $75^\circ$ , such that capillary effects are enhanced; wherein the light source emits light into either the first or second of the transparent elevations; the incident ray is transmitted through the first or second facet and the light is totally reflected at the first or second facet and the light detector detects light either of either the first or second facet.

Altfather (*figures 2, 5A and 5B*) discloses an intrusion detector including a sensor arrangement for detecting a liquid applied on a surface to render the intrusion detector inoperable, the sensor arrangement comprising: at least one second elevation (22) having a second facet (22A) formed adjacent to a first facet (21B) of a first elevation (21) wherein the second facet (22B) defines a second angle with the surface (17A), wherein the second angle is larger than  $75^\circ$ , such that capillary effects are enhanced; a light source (34) arranged for emitting an incident ray into a first direction such that the incident ray (A) passes through the surface (17A) into on of the transparent elevation (21) and the second elevation (22), such that in presence of a liquid (Ink) at one of the first facet and the second facet an incident my will be transmitted through the first facet (21A) or the second facet (22A), wherein in absence of a liquid (Ink) the incident ray will be reflected due to a total reflection at the first facets (21A and 21B) or the second facet



Art Unit: 2878

(22A); and a light detector (38) for detecting the reflected incident ray at one of the first facet and the second facet.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the arrangement of Altfather in combination with the device of Wieser because it will provide an effective and reliable method to determine when liquid is present thus increasing the overall accuracy and capability of the device.

**Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieser in view of Altfather, as applied to claim 1, and in further view of Tomooka (US Patent No. 6,469,625 B1).**

**Regarding claim 11**, Wieser as modified by Altfather (*Wieser: figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising a light detector (9) and a light source (8) but fails to teach a second light detector is provided for detecting a ray reflected at an object placed in front of the elevations.

Tomooka (*figures 2A and 3*) discloses a sensor arrangement comprising a second light detector (12A) is provided for detecting a ray reflected at an object (8) placed in front of the elevations (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the second light detector of Tomooka in combination with the arrangement of Wieser as modified by Altfather because it will provide an increase in the sensor detecting tampering means such as a liquid or an object, thus increasing the overall accuracy and reliability of the device.

**Regarding claim 12**, Wieser as modified by Altfather (*Wieser: figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising a light detector (9) and a light source (8) but fails to teach a that the light source and/or light detector comprises a waveguide.

Tomooka (*figure 3*) discloses a sensor arrangement comprising a light detector (12) comprising a waveguide (9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the waveguide of Tomooka in combination with the arrangement of Wieser as modified by Altfather because it will provide alternative configurations and also ensure that the reflected beams are being properly focused onto the detector.

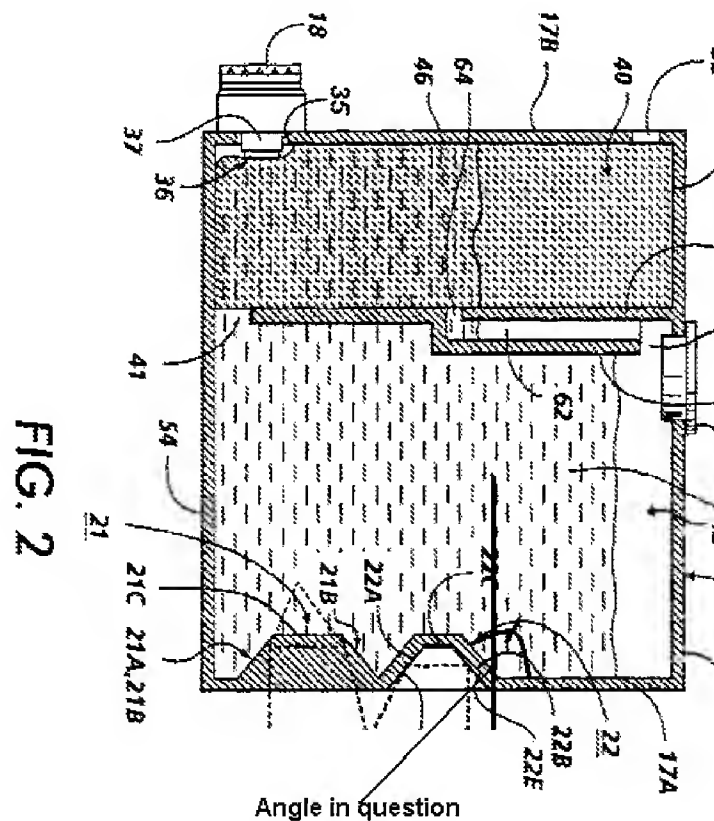
### ***Response to Arguments***

Applicant's arguments filed 7 June 2010, that the device claim now calls out an intrusion detector has been fully considered but is not persuasive. Examiner disagrees. It appears that Applicant did not place the limitation in the body of the claim but merely in the preamble. Applicant must place some language directed towards the intrusion device within the body of the claim language. Applicant failed to further differentiate the claim language with respect to the current rejection. Therefore, the rejections, as set forth above, are maintained.

Applicant's arguments filed 7 June 2010, that the Altfather reference fails to teach a second angle with the surface larger than 75 degrees has been fully considered but is not persuasive. Examiner disagrees. It appears Applicant may have misinterpreted

Art Unit: 2878

figure 2 of the Altfather reference. In particular, element 22 forms an angle with surface (17A) which is clearly at an angle greater than 75 degrees (a figure has been supplied below). Please note the vertical axis. With respect to this particular axis an angle greater than 75 degrees is achieved by the second transparent elevation. Applicant must clarify the exact location for the measurement of this angle. Applicant provides no clarification thus the examiner's interpretation is well within the scope of the claim. Therefore, the rejections, as set forth are maintained.



Reproduced from US Patent No. 5,997,121

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANCIS M. LEGASSE JR whose telephone number is

Art Unit: 2878

(571)272-9798. The examiner can normally be reached on Monday thru Thursday 9:00 am to 7:30 pm E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Francis M LeGasse Jr/  
Examiner, Art Unit 2878